

Remarks

Favorable reconsideration of this application, in view of the above amendments and in light of the following remarks and discussion, is respectfully requested.

Claims 17-32 are currently pending in the application; Claims 17-32 having been amended by way of the present response.

In the outstanding Office Action, Claims 17-20, 22-27, and 30-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over European Patent Office Publication No. EP 0 155 237 to Katinger et al. (Katinger). Claim 21 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Katinger in view of U.S. Patent No. 4,734,372 to Rotman or U.S. Patent No. 5,190,878 to Wilhelm. Claim 28 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Katinger in view of U.S. Patent No. 5,688,687 to Palsson et al. Claim 29 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Katinger in view of Japanese Publication No. 57-166985 to Takahata et al. Applicants respectfully assert that the above amendments to the claims have overcome the rejections for the following reasons.

As stated above, Claims 17-32 have been amended. Applicants respectfully assert that support for the changes to the claims is self-evident from the originally filed disclosure, including the original claims, and that therefore no new matter has been added.

The present invention is directed to bioreactors and methods for cultivating an organic material with the bioreactors. Independent Claim 17 recites a cell including first, second, and third carrier plates having predetermined thicknesses disposed between top and bottom covers. Two partition wall elements have membranes configured to be permeable to a nutrient medium and substantially impermeable to an organic material cultivated in the cell, the two partition wall elements disposed in the first and third carrier plates. A carrier element is configured to be permeable to the nutrient medium and to permit adhesion of the organic

material thereto, the carrier element disposed in the second carrier plate between the first and third carrier plates.

Katinger, as stated in the English language translation, is directed to a process and apparatus for the culture of cells and microorganisms. As shown in Figure 9, for example, of Katinger, between membranes A and B a fabric 25 is provided which functions simultaneously as a bracing fabric for the membranes and as a carrier 25 for the cells.¹ By this arrangement, an entire cell growth chamber is filled.²

However, Applicants respectfully assert that Katinger does not teach or suggest the claimed features of first, second, and third carrier plates having predetermined thicknesses, two partition wall elements disposed in the first and third carrier plates, and a carrier element disposed in the second carrier plate between the first and third carrier plates as recited in amended independent Claim 17. In particular, Applicants respectfully assert that Katinger does not show or state first, second, and third carrier plates having predetermined thicknesses, does not show or state two fabrics 25 disposed in the first and third carrier plates, and does not show or state the carrier 25 disposed in the second carrier plate between the first and second carrier plates, for example.

Specifically, independent Claim 17 recites “the two partition wall elements disposed in the first and third carrier plates . . . and . . . the carrier element disposed in the second carrier plate between the first and third carrier plates.”

Further, Applicants respectfully assert that the claimed features of first, second, and third carrier plates having predetermined thicknesses, two partition wall elements disposed in the first and third carrier plates, and a carrier element disposed in the second carrier plate between the first and third carrier plates as recited in amended independent Claim 17, provide numerous advantages which are not provided by the apparatus for the culture of cells of

¹ Page 11, lines 9-13, of the English language translation.

² Page 7, lines 1-6, of the translation.

Katinger. Specifically, Applicants respectfully assert that the claimed bioreactor permit an adjustment of a desired distance between the carrier element and the partition wall elements.³ By variation of the thicknesses of the individual carrier plates, distances of components of the bioreactor can be excellently adapted to conditions required for cultivation of specific organic materials.⁴ Applicants respectfully assert that the apparatus for the culture of cells of Katinger, which does not include first, second, and third carrier plates having predetermined thicknesses, two partition wall elements disposed in the first and third carrier plates, and a carrier element disposed in the second carrier plate between the first and third carrier plates, but rather which includes the fabric 25 that functions simultaneously as the bracing fabric for the membranes A and B and as the carrier for the cells, is unable to provide such advantages.

Thus, for the above reasons, Applicants respectfully request that the rejection of independent Claim 17 under 35 U.S.C. § 103(a) be withdrawn, and the independent claim allowed.

Regarding dependent Claims 18-32, Applicants respectfully assert that the dependent claims are allowable for the same reasons as the independent claim from which they depend, as well as for their own features. Thus, Applicants respectfully request that the rejections of dependent Claims 18-32 under 35 U.S.C. § 103(a) be withdrawn and the dependent claims allowed.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 17-32 is earnestly solicited.

³ Please see page 14, lines 2-5, of Applicants' amended specification.

⁴ Please see page 15, lines 25-30, of Applicants' amended specification.

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Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below listed telephone number.

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Respectfully submitted,

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